AMENDMENTS TO THE CLAIMS

Claims 1-5 (Cancelled)

Claim 6 (Currently Amended) A peritoneal function testing method comprising:

providing a computation unit;

obtaining data of a dialysis patient using the computation unit;

a 1st computation step of ~~obtaining data of a dialysis patient using a computation unit and~~ obtaining individual initial estimate values for (i) $MTAC_{glc}$, $MTAC_{un}$, and $MTAC_c$ by using the obtained data and a processor of the computation unit to compute a Pyle-Popovich model, and (ii) a L_PS_C/L_PS ratio by using L_PS_C and L_PS, where $MTAC_{glc}$ is an overall mass transfer-area coefficient for glucose, $MTAC_{un}$ is an overall mass transfer-area coefficient for urea nitrogen, $MTAC_c$ is an overall mass transfer-area coefficient for creatinine, L_PS_C is a permeability coefficient for cell pores, and L_PS is an overall permeability coefficient;

a 2nd computation step, following the 1st computation step, of using the computation unit to (i) obtain computation results by computing a Three-Pore Theory model using the individual initial estimate values for the $MTAC_{glc}$, the $MTAC_{un}$, the $MTAC_c$, and the L_PS_C/L_PS ratio obtained by the 1st computation step, and (ii) calculate an optimal solution of the computation results obtained by computing the Three-Pore Theory model, the optimal solution being calculated using a Genetic Algorithm; and

using a $MTAC_{un}/MTAC_c$ ratio, which is calculated using an optimal $MTAC_{un}$ and an optimal $MTAC_c$ determined using the optimal solution, as an index for a peritoneal function test.

Claim 7 (Previously Presented) The peritoneal function testing method of Claim 6, wherein

in the 1st computation step including the computing of the Pyle-Popovich model, solute concentration values for the glucose, the urea nitrogen, and the creatinine are individually calculated as approximation solutions of linear differential equations.

Claim 8 (Previously Presented) The peritoneal function testing method of Claim 7, wherein the $MTAC_{un}/MTAC_c$ ratio and a volume of water removal are used as indexes for the peritoneal function test.

Claim 9 (Previously Presented) The peritoneal function testing method of Claim 8, wherein a correlation between the $MTAC_{un}/MTAC_c$ ratio and the volume of water removal is used as an index for the peritoneal function test.

Claims 10-17 (Cancelled)

Claim 18 (Currently Amended) A peritoneal dialysis planning apparatus comprising:

a processor;

a memory;

a computation unit programmed ~~operable~~ to (i) obtain data of a dialysis patient and store the obtained data in the memory, (ii) obtain individual initial estimate values for $MTAC_{glc}$, $MTAC_{un}$, and $MTAC_c$ by using the obtained data and the processor to compute a Pyle-Popovich model and for a L_PS_C/L_PS ratio by using L_PS_C and L_PS, where $MTAC_{glc}$ is an overall mass transfer-area coefficient for glucose, $MTAC_{un}$ is an overall mass transfer-area coefficient for urea nitrogen, $MTAC_c$ is an overall mass transfer-area coefficient for creatinine, L_PS_C is a permeability

coefficient for cell pores, and L_PS is an overall permeability coefficient, (iii) obtain computation results by computing a Three-Pore Theory model using the processor and the individual initial estimate values for the $MTAC_{glc}$, the $MTAC_{un}$, the $MTAC_c$, and the L_PS_C/L_PS ratio, (iv) calculate, using the processor and a Genetic Algorithm, an optimal solution of the computation results obtained by computing the Three-Pore Theory model, and (v) calculate a $MTAC_{un}/MTAC_c$ ratio using the processor, an optimal $MTAC_{un}$ determined using the optimal solution and an optimal $MTAC_c$ determined using the optimal solution; and

an output unit operable to output the $MTAC_{un}/MTAC_c$ ratio as an index for a peritoneal function test.

Claim 19 (Previously Presented) The peritoneal dialysis planning apparatus of Claim 18, wherein during the computation of the Pyle-Popovich model, the computation unit calculates individual solute concentration values for the glucose, the urea nitrogen, and the creatinine, as approximation solutions of linear differential equations.

Claim 20 (Previously Presented) The peritoneal dialysis planning apparatus of Claim 18, wherein a correlation between (i) the $MTAC_{un}/MTAC_c$ ratio calculated using the optimal $MTAC_{un}$ and the optimal $MTAC_c$ and (ii) a volume of water removal, is presented in a graph that is output to the output unit.

Claim 21 (Previously Presented) The peritoneal dialysis planning apparatus of Claim 20, wherein the output unit is a display unit, and

wherein the display unit outputs the correlation by displaying a distribution of plotted actual measurements of multiple patients and a regression line for the distribution.

Claim 22 (Previously Presented) The peritoneal dialysis planning apparatus of Claim 18, wherein the output unit outputs one of the $MTAC_{un}/MTAC_c$ ratio calculated using the optimal solution and the L_PS_C/L_PS ratio calculated using the optimal solution, which is plotted in a two axis coordinate system together with a volume of water removal.

Claims 23-31 (Cancelled)

Claim 32 (Previously Presented) A computer-readable recording medium having a peritoneal function testing program recorded thereon, the peritoneal function testing program causing a computer to execute a peritoneal function testing method comprising:

a 1st computation step of obtaining data of a dialysis patient using a computation unit and obtaining individual initial estimate values for (i) $MTAC_{glc}$, $MTAC_{un}$, and $MTAC_c$ by using the obtained data and a processor of the computation unit to compute a Pyle-Popovich model, and (ii) a L_PS_C/L_PS ratio by using L_PS_C and L_PS, where $MTAC_{glc}$ is an overall mass transfer-area coefficient for glucose, $MTAC_{un}$ is an overall mass transfer-area coefficient for urea nitrogen, $MTAC_c$ is an overall mass transfer-area coefficient for creatinine, L_PS_C is a permeability coefficient for cell pores, and L_PS is an overall permeability coefficient;

a 2nd computation step, following the 1st computation step, of using the computation unit to (i) obtain computation results by computing a Three-Pore Theory model using the individual initial estimate values for the $MTAC_{glc}$, the $MTAC_{un}$, the $MTAC_c$, and the L_PS_C/L_PS ratio obtained

by the 1st computation step, and (ii) calculate an optimal solution of the computation results obtained by computing the Three-Pore Theory model, the optimal solution being calculated using a Genetic Algorithm; and

using a $MTAC_{un}/MTAC_c$ ratio, which is calculated using an optimal $MTAC_{un}$ and an optimal $MTAC_c$ determined using the optimal solution, as an index for a peritoneal function test.

Claim 33 (Previously Presented) The computer-readable recording medium of Claim 32, wherein the peritoneal function testing method includes, during the 1st computation step including the computing of the Pyle-Popovich model, calculating individual solute concentration values for the glucose, the urea nitrogen, and the creatinine, as approximation solutions of linear differential equations.

Claim 34 (Previously Presented) The computer-readable recording medium of Claim 32, wherein the peritoneal function testing method includes using the $MTAC_{un}/MTAC_c$ ratio and a volume of water removal as indexes for the peritoneal function test.

Claims 35-45 (Cancelled)